



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of

Takeya Abe et al.

Application No.: 09/936,514

Filing Date: September 14, 2001

Title: PROCESS FOR PURIFYING AMIDE  
COMPOUND

) MAIL STOP IDS

) Group Art Unit: 1652

) Examiner: CHRISTIAN L FRONDA

) Confirmation No.: 4410

FOURTH  
INFORMATION DISCLOSURE STATEMENT  
TRANSMITTAL LETTER

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Enclosed is a Fourth Information Disclosure Statement (IDS) and accompanying form PTO-1449 for the above-identified patent application.

- ☐ No additional fee for submission of an IDS is required.
- ☒ The fee of \$ 180 as set forth in 37 C.F.R. § 1.17(p) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e) is also enclosed.
- ☐ A statement under 37 C.F.R. § 1.97(e), and the fee of \$ 180 as set forth in 37 C.F.R. § 1.17(p) are also enclosed.
- ☐ Charge \_\_\_\_\_ to Deposit Account No. 02-4800 for the fee due.
- ☐ A check in the amount of \_\_\_\_\_ is enclosed for the fee due.
- ☒ Charge \$ 180 to credit card for the fee due. Form PTO-2038 is attached.
- ☒ The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Date July 13, 2007

Respectfully submitted,

P.O. Box 1404  
Alexandria, VA 22313-1404  
858 509 7300

BUCHANAN INGERSOLL & ROONEY LLP

By: 

Michael P. Reed  
Registration No. 45647

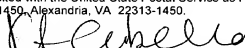
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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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) Confirmation No.: 4410

**FOURTH INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

In accordance with the duty of disclosure as set forth in 37 C.F.R. § 1.56, the accompanying information is being submitted in accordance with 37 C.F.R. §§ 1.97 and 1.98.

Pursuant to 37 C.F.R. § 1.98, a copy of each of the documents cited is enclosed.

The documents are being submitted after a first Office Action on the merits but prior to the closing of prosecution, therefore under 37 C.F.R. § 1.97(c), the fee set forth in 37 C.F.R. § 1.17(p) is enclosed.

A fee of \$ 180 as set forth in 37 C.F.R. § 1.17(p) is enclosed.

I, the undersigned, hereby state in accordance with 37 C.F.R. § 1.97(e)(1) that no item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three (3) months prior to the filing of this Information Disclosure Statement. communication from a foreign patent office in a counterpart foreign application not more than three (3) months prior to the filing of this Information Disclosure Statement.

To assist the Examiner, the documents are listed on the attached form PTO-1449. It is respectfully requested that an Examiner initialed copy of this form be returned to the undersigned.

The Director is hereby authorized to charge any appropriate fees under 37 C.F.R. §§ 1.16, 1.17 and 1.21 that may be required by this paper, and to credit any overpayment, to Deposit Account No. 02-4800. This paper is submitted in duplicate.

Respectfully submitted,

BUCHANAN INGERSOLL & ROONEY LLP

Date: July 13, 2007

By: 

Michael Reed, Ph.D.

Registration No. 45,647

P.O. Box 1404  
Alexandria, VA 22313-1404  
858 509 7300

(use as many sheets as necessary)

Sheet 1 of 1

Application Number	09/936,514
Filing Date	September 14, 2001
First Named Inventor	Takeya Abe et al.
Examiner Name	CHRISTIAN L. FRONDA
Attorney Docket No.	1018793-000253

[illegible][illegible]

Examiner Initials	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.

Examiner  
Signature

Date  
Considered

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with M.P.E.P. § 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.

1/7/1

DIALOG(R) File 351: Derwent WPI

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WPI Acc no: 1973-31508U/197322

Refining aqs acrylamide solns - by treatment with active charcoal contg adsorbed cupric ions, to eliminate changes in co

Patent Assignee: MITK (MITK); MITSUI TOATSU CHEM INC (MITK)

Inventor: ASANO S; HONDA T; TSUCHIYA R; YOSHIMURA K

Patent Family ( 14 patents, 9 countries )

Patent Number	Kind	Date	Application Number	Kind	Date	Update	Type
BE 792366	A	00000000				197322	B
NL 197216470	A	00000000				197326	E
DE 2259096	A	00000000	DE 2259096	A	19721202	197327	E
FR 2164324	A	00000000				197341	E
JP 48062713	A	00000000				197349	E
JP 48062714	A	00000000				197349	E
JP 48062715	A	00000000				197349	E
DE 2259096	B	19750828	DE 2259096	A	19721202	197536	E
GB 1404798	A	19750903				197536	E
CA 974257	A	19750909				197539	E
US 3923741	A	19751202	US 1972312337	A	19721205	197551	E
JP 1976028608	B	19760820				197638	E
CH 582533	A	19761214				197702	E
JP 1977035648	B	19770910				197740	E

Priority Applications (no., kind, date): JP 197197893 A 19711206; JP 197197892 A 19711206; JP 197197891 A 19711206

Patent Details

Patent Number	Kind	Lan	Pgs	Draw	Filing Notes
BE 792366	A	FR			
CA 974257	A	EN			
CH 582533	A	DE			

Alerting Abstract BE A

The aqs. acrylamide soln. is obtained by a catalytic hydration process from acrylonitrile using a Cu catalyst and the active C material is pre-treated e.g. with aqs. Cu(NO<sub>3</sub>)<sub>2</sub> soln., so that it

contains adsorbed is not <0.05 pt. Cu/100 pt. active C.

**Title Terms /Index Terms/Additional Words:** REFINE; ACRYLAMIDE; SOLUTION;  
TREAT; ACTIVE; CHARCOAL; CONTAIN; ADSORB; CUPRIC; ION; CHANGE; CO

**Class Codes**

International Patent Classification					
IPC	Class Level	Scope	Position	Status	Version Date
B01D-015/00			Main		"Version 7"
C07C-102/08; C07C-103/13; C07C-103/133			Secondary		"Version 7<

**US Classification, Issued:** 564206000, 564127000

**File Segment:** CPI

**DWPI Class:** A41; E16

**Manual Codes (CPI/A-N):** A01-D06; E10-D03

1. **Original Publication Data by Authority**

2. **Belgium**

**Publication No.** BE 792366 A (Update 197322 B)

**Publication Date:** 00000000

**Assignee:** MITSUI TOATSU CHEM INC (MITK)

MITSUI TOATSU CHEM INC (MITK)

MITK (MITK)

**Language:** FR

**Priority:** JP 197197891 A 19711206

JP 197197892 A 19711206

JP 197197893 A 19711206

**Original IPC:** B01D-15/00 C07C-102/08 C07C-103/13

**Current IPC:** B01D-15/00 C07C-102/08 C07C-103/13

3. **Canada**

**Publication No.** CA 974257 A (Update 197539 E)

**Publication Date:** 19750909

**Language:** EN

4. *Switzerland*

*Publication No. CH 582533 A (Update 197702 E)*

*Publication Date: 19761214*

*Language: DE*

5. *Germany*

*Publication No. DE 2259096 A (Update 197327 E)*

*Publication Date: 00000000*

*Verfahren zur Reinigung von waessrigen Acrylamid-Loesungen*

*Assignee: Mitsui Toatsu Chemicals, Inc., Tokio*

*Inventor: Asano, Shiro, Yokohama, Kanagawa*

*Yoshimura, Kiyotaka, Mobara, Chiba*

*Tsuchiya, Ryoji, Kamakura*

*Honda, Tadatoshi, Yokohama, Kanagawa, JP*

*Agent: Ratzel, G., Dipl.-Chem. Dr.rer.nat., Patentanwalt, 6800 Mannheim*

*Language: DE*

*Application: DE 2259096 A 19721202 (Local application)*

*Claim:*

- *1. Verfahren zur Reinigung von waessrigen Acrylamid-Loesungen, dadurch gekennzeichnet, dass man diese Loesung mit Aktivkohle behandelt, welche vorher Kupfer-II-Ionen absorbiert hat.*

*Publication No. DE 2259096 B (Update 197536 E)*

*Publication Date: 19750828*

*Verfahren zur Reinigung von waessrigen Acrylamidloesungen*

*Assignee: Mitsui Toatsu Chemicals, Inc., Tokio*

*Inventor: Asano, Shiro, Yokohama, Kanagawa*

*Yoshimura, Kiyotaka, Mobara, Chiba*

*Tsuchiya, Ryoji, Kamakura*

*Honda, Tadatoshi, Yokohama, Kanagawa, JP*

*Agent: Ratzel, G., Dipl.-Chem. Dr.rer.nat., Patentanwalt, 6800 Mannheim*

*Language: DE*

*Application: DE 2259096 A 19721202 (Local application)*

*Original IPC: C07C-103/133*

*Current IPC: C07C-103/133(A)*

6. *France*

*Publication No. FR 2164324 A (Update 197341 E)*

*Publication Date: 00000000*

*Language: FR*

7. *Great Britain*

*Publication No. GB 1404798 A (Update 197536 E)*

*Publication Date: 19750903*

*Language: EN*

8. *Japan*

*Publication No. JP 48062713 A (Update 197349 E)*

*Publication Date: 00000000*

*Language: JA*

*Publication No. JP 48062714 A (Update 197349 E)*

*Publication Date: 00000000*

*Language: JA*

*Publication No. JP 48062715 A (Update 197349 E)*

*Publication Date: 00000000*

*Language: JA*

*Publication No. JP 1976028608 B (Update 197638 E)*

*Publication Date: 19760820*

*Language: JA*

*Publication No. JP 1977035648 B (Update 197740 E)*

*Publication Date: 19770910*

*Language: JA*

9. *Netherlands*

*Publication No. NL 197216470 A (Update 197326 E)*

*Publication Date: 00000000*

*Language: NL*

10. *United States*

*Publication No. US 3923741 A (Update 197551 E)*

*Publication Date: 19751202*

*Acrylamid aqueous solution refining process*

*Assignee: Mitsui Toatsu Chemicals, Incorporated*

*Inventor: Asano, Shiro, JA, US*

*Yoshimura, Kiyotaka*

*Tsuchiya, Ryoji*

*Honda, Tadatoshii*

*Agent: Ceccon, Clario*

*Language: EN*



*Application: US 1972312337 A 19721205 (Local application)*

*Original US Class (main): 564206*

*Original US Class (secondary): 564127*

*Original Abstract:*

*There is disclosed an acrylamide aqueous solution refining process wherein an acrylamide aqueous solution obtained through a catalytic hydration process etc. is distilled to remove acrylonitrile when necessary; then is treated with active carbon, which has been arranged to adsorb cupric ion before use so that the polymerization of acrylamide that tends to take place around active carbon can be prevented thereby; and, if necessary, deionization is carried out by means of ion-exchange resin.*